Hippocampus tyro, a new seahorse (Gasterosteiformes: Syngnathidae) from the Seychelles

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Received July 29; accepted September 17, 2008

Abstract. *Hippocampus tyro* is described as a new species of seahorse from one specimen, 34 mm high and 61 mm in total length, dredged from 43–48 m off Poivre Atoll, Seychelles in 1992. It is unique for the genus in having 14 trunk rings and a single middorsal gill opening. It is compared with two other diminutive species, *H. pusillus* Fricke and *H. jugumus* Kuiter, sharing with them a slender body, confluent middorsal shoulder ridges, and similar spination.

Keywords: Syngnathidae, *Hippocampus*, new species, Seychelles

INTRODUCTION

The first author was fortunate to be a participant in a marine biological expedition to the Seychelles aboard the Dutch research vessel *Tyro* in 1992 (van der Land 1994). Fishes were collected in offshore stations by trawls and dredges, and inshore with the use of the ichthyocide rotenone, the anaesthetic quinaldine sulphate, and by spearing. The expedition resulted in the collection of 374 species of fishes, of which 108 were new records for the Seychelles (Randall & van Egmond 1994).

Station 766 was a haul by a rectangular dredge on the north side of Poivre Atoll in the Amirantes at a depth of 43–48 m. A single small specimen of a seahorse was among the fragments of the corals *Stylophora pistillata*, *Montipora digitata* and *Dendrophyllia* sp. taken in the haul. A colour photograph was taken (Fig. 1), and the specimen was deposited in the Bishop Museum in Honolulu (BPBM) as *Hippocampus* sp.

When the specimen could not be identified to species in the review of seahorses by Lourie et al. (1999), it was sent on loan to the second author. Although it keys to the genus *Hippocampus* in Dawson (1985) and Dawson in Smith and Heemstra (1986) by having a prehensile tail and the head angled ventrally by more than 70°, its slender body form and the high number of trunk and tail rings suggested a relationship to the pipehorse genus *Acentronura*. After initial attempts at DNA sequencing by the second author, the specimen was sent to a colleague who was willing to try using a different protocol, in spite of the initial preservation in formalin. The tissue yielded only a conclusion that the specimen is a syngnathid. Regrettably, the tissue samples taken from the specimen resulted in the loss of the viscera, the anal fin, and most of the muscle of the proximal half of the tail.

A large collection of fishes was made during a recent expedition to the Seychelles by the South African Institute for Aquatic Biodiversity. We have checked with this institution for possible additional material of this seahorse. Unfortunately, no specimens of *Hippocampus* were collected, so we describe the species here from the single specimen.

Proportional measurements, rounded to the nearest 0.05, are related to the head length (HL), measured from the tip of the snout to the most posterior edge of the shoulder ridge, or the total length (TL), determined by bending a slender wire to the shape of the specimen, straightening the wire, and measuring its length. Total length is equivalent to standard length as defined by Lourie et al. (1999). Trunk length was measured by bending a wire from the anterior edge of the first trunk ring along the lateral trunk ridge to the anterior edge of the first tail ring. The first trunk ring is the one bearing the pectoral-fin base, and the last trunk ring, much deeper than the first tail ring, contains the anus. The measurements of maximum depth of the trunk and tail were made from the outer edge of the superior median trunk or tail ridge to the median ventral or tail ridge

Hippocampus tyro sp. nov.

Figs. 1–2

Holotype. BPBM 35555, female, 61 mm TL, Seychelles, Amirantes, north end of Poivre Atoll, 5°44'S, 53°20'E,

coarse calcareous sand and coral, 43–48 m, rectangular dredge, R/V *Tyro* Station 766, J. van der Land et al., 29 December 1992.

Fig. 1. Holotype of *Hippocampus tyro*, BPBM 35555, 61 mm total length, Poivre Atoll, Amirantes, Seychelles.

Diagnosis. Dorsal rays 15; pectoral rays 14 or 15; trunk rings 14; tail rings 38; subdorsal rings 3; subdorsal spines 4, forming a square, the dorsal 2 enlarged; spines of trunk and tail ridges blunt and moderate in size; third and seventh superior trunk spines, and fourth, eighth, and eleventh superior tail spines enlarged, with a slender, leaf-like filament; body slender, the maximum trunk depth (at seventh trunk ring) 11.2 in TL; depth of tail at third tail ring 23 in TL; trunk length 3.2 in TL; head at right angle to trunk as photographed (80° in preserved specimen); head length 6.2 in TL; snout length 2.2 in HL; eye diameter 6.25 in HL; one suborbital, 2 supraorbital, and 2 nose spines; coronet oval and cup-like in dorsal view, with a rugose spine to each side, followed by a narrow median ridge; anterior edges of coronet converging to a low, arrow-like, median spine; shoulder ridge continuous middorsally, followed by crest-like ridge; gill opening a single middorsal slit in neck ridge between coronet and collar of shoulder ridge; colour in preservative uniform greyish white; colour when fresh light brown with whitish blotches, grading to light orangish brown posteriorly on tail, and to whitish ventrally on head and trunk; trunk and tail ridge spines white; filaments on spines dark brown.

Description. Dorsal rays 15; pectoral rays 14 (15 on right side); trunk rings 14; tail rings 38; subdorsal rings 3; superior trunk ridge ending under dorsal fin with 2 enlarged subdorsal spines that angle posterolaterally; superior tail ridge commencing with 2 small subdorsal spines in alignment with larger subdorsal spines above; lateral trunk ridge continuous with inferior tail ridge; spines of trunk and tail ridges moderate in size and blunt; first 8 dorsal trunk spines as double spines; third and seventh superior trunk spines and fourth, eighth, and eleventh superior tail spines enlarged (counts of tail spines include anterior 2 subdorsal spines); a slender, leaf-like, branching filament up to an eye diameter in length on enlarged superior trunk and tail spines; superior trunk spines anterior to dorsal fin linked across back by a low double ridge; spines of superior tail ridge progressively smaller posteriorly, disappearing posterior to 26th tail ring; spines of inferior tail ridge not detected posterior to 12th tail ring; body slender, the maximum trunk depth (seventh trunk ring, between spines) 11.2 in TL; depth of tail at third tail ring 25.5 in TL; trunk length 3.2 in TL; head at right angle to trunk as photographed (80° in preserved specimen); head length 6.2 in TL; head depth from just posterior to coronet (hence at gill opening) to base of cheek spine (as defined by Lourie et al., 1999: fig. 4) 1.65 in HL; snout length 2.2 in HL; minimum snout depth 7.5 in HL; maximum snout depth 4.5 in HL: eye diameter

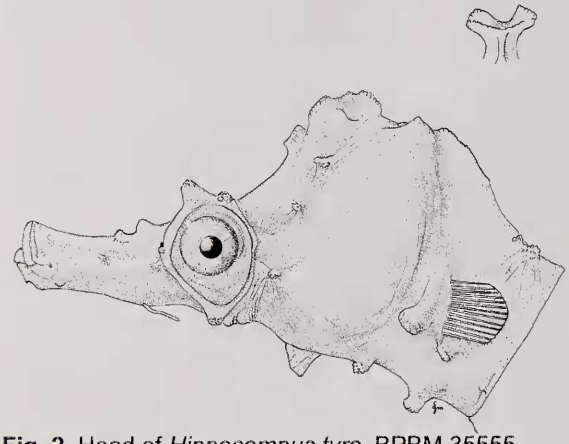

Fig. 2. Head of *Hippocampus tyro*, BPBM 35555. (Drawn by Susan Monden.)

6.25 in HL; 2 supraorbital spines, angling laterally, the anterior twice as long as posterior, slightly longer than pupil diameter; one suborbital spine, intermediate in length to the 2 supraorbital spines; 2 median dorsal nose spines basally on snout, the posterior twice as large, its length about equal to second supraorbital

spine; a transverse pair of blunt spines ventrally on head slightly posterior to suborbital spine; coronet well-developed, its height 9.4 in HL; coronet oval and cup-like in dorsal view, with a rugose spine projecting to each side, followed by a narrow median ridge; anterior edges of cup descending and converging to a low, arrow-like, median spine; 2 small spines in a vertical row ventral to coronet and above level of upper edge of orbit; shoulder (cleithral) ridge continuous middorsally, followed by a prominent, crest-like, median ridge; gill opening a narrow middorsal slit in neck ridge between median posterior ridge of coronet and collar of shoulder ridge; a large, truncate, rugose spine on shoulder ridge anterior to ventral third of pectoral-fin base; cheek spine on shoulder ridge ventrally on head nearly half way to large V-shaped midventral head spine; a prominent midventral spine on first trunk ring; ventral trunk keel nearly as deep as pupil diameter; longest dorsal ray 3.1 in HL; longest pectoral ray 4.2 in HL. Colour in alcohol uniform greyish white, only the very small filament on enlarged superior and tail ridges brown. Colour when fresh as in Fig. 1.

Etymology. This little seahorse is named for the Dutch R/V *Tyro*, in recognition of the vessel serving as the base for a very successful marine biological expedition to the Seychelles.

Remarks. *Hippocampus tyro* is unique among known species of seahorses in having 14 trunk rings (8–13 in other species) and a single, slit-like, middorsal gill opening. It is most similar to *H. pusillus* Fricke 2004, described from three specimens, 28.3–39.0 mm in height, collected from 35–228 m off New Caledonia and the Loyalty Islands; and to *H. jugumus* Kuiter, 2001 known from one specimen, 44 mm in height, from Lord Howe Island. *H. tyro* shares with both a slender body, confluent shoulder ridges, and similar (though blunter) spination. It differs from *H. pusillus* in the much greater head depth, 38 vs. 34 tail rings, and 14 or 15 instead of 12 or 13 pectoral rays. *H. jugumus* differs in having 12 trunk rings, 37 tail rings, 20 dorsal rays, a prominent branching supraorbital spine, and a longer snout.

ACKNOWLEDGMENTS

We thank Dr Kate A. Moots of the University of Guam for her very thorough review of our manuscript.

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